

claim 2
+ ref

--12. A process for producing a semiconductor device

which comprises forming an element-separating oxide film on a silicon substrate by thermal oxidation, and thereafter carrying out a heat-treatment at a temperature of not lower than 800°C while keeping a surface of the oxide film or silicon substrate in a bare state in an inert atmosphere, followed by formation of a gate oxide film, introduction of impurities, formation of electrodes and wiring, and formation of an insulating film so as to form a transistor,

wherein the oxide film is formed at 850°C and said heat-treatment is carried out at 950°C for 30 minutes, so as to reduce stress in the oxide film to substantially zero, and the thermal oxidation is carried out at least in an atmosphere of a gaseous mixture of hydrogen and oxygen or in an atmosphere of H₂O.

13. A process according to claim 12, wherein the heat-treatment is carried out in an atmosphere of an inert gas selected from nitrogen, hydrogen and argon, or a gaseous mixture of these gases, said gas or gaseous mixture being able to contain 5% or less of oxygen.

14. A process according to claim 12, wherein the oxide film or surface of silicon substrate is kept in a base state during the heat-treatment for stress relaxation.

Claim 15

15. A process for producing a semiconductor device which comprises forming an element-separating oxide film on a silicon substrate by thermal oxidation, and thereafter carrying out a heat-treatment at a temperature of not lower than 800°C while keeping a surface of the oxide film or silicon substrate in a bare state in an inert atmosphere, followed by formation of a gate oxide film, introduction of impurities, formation of electrodes and wiring, and formation of an insulating film so as to form a transistor,

wherein the heat-treatment is carried out while keeping the oxide film or surface of silicon substrate in a bare state after removal of an oxidation-preventing film, and the thermal oxidation is carried out at least in an atmosphere of a gaseous mixture of hydrogen and oxygen or in an atmosphere of H₂O.

Claim 15 + inert

16. A process according to claim 15, wherein the heat-treatment is carried out in an atmosphere of an inert gas selected from nitrogen, hydrogen and argon, or a gaseous mixture of these gases, said gas or gaseous mixture being able to contain 5% or less of oxygen.

17. A process according to claim 15, wherein the oxide film or surface of silicon substrate is kept in a base state during the heat-treatment for stress relaxation.--